IDAHO
DEPARTMENT OF FISH AND GAME

Jerry M. Conley, Director

MAGIC VALLEY STEELHEAD HATCHERY

Annual Report

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MAGIC VALLEY STEELHEAD HATCHERY

Annual Report

ABSTRACT

The fish raised at Magic Valley Steelhead Hatchery this year were brought on site as eggs in April of 1983. They were reared until April of 1984. Slate Creek, Allison Creek and the East Fork of the Salmon River received 60,404 B-strain fish. The Salmon River in the Sawtooth area near Stanley was planted with 204,170 A-strain fish.

The feed experiment started in 1983 was continued until the planting dates. Conclusions of the experiment were that feed conversion was better on Rangens diet than on the Clear Springs diet. Also, Rangens feed was generally less expensive than Clear Springs feed. Clear Springs feed was more dusty and more debris appeared on the pond bottom from it than from the Rangens feed.

The hatchery water supply was turned off in early July. The Corps. of Engineers requested we do this to stabilize the water table to its natural level for hatchery design. They felt that the water laying in the old earthen raceways was probably giving artificial readings on the water table gauges distributed around the hatchery area.

Drilling for a domestic water well was started in May 1984. This was completed in early July. Artesian water flowing approximately 12 to 15 gallons per minute resulted. The well has been tested and pumped at 35 gallons per minute.

To date, no further hatchery construction has been started.

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OBJECTIVES

The objectives of the Magic Valley Steelhead Hatchery are:

1. To hatch and rear to smolt size, steelhead trout for planting in the Salmon River drainage.

2. To maintain the hatchery to a degree where fish rearing could be accomplished.

3. To maintain the appearance of the grounds. This includes keeping the hatchery rearing pond areas and building areas mowed and free from weeds.

4. To assist and monitor crews working on hatchery design and construction wherever possible. To act as liaison to the Nampa and Boise offices.

- INTRODUCTION

The hatchery is located 7 miles north and west of Filer in the Snake River canyon. It receives its water from Crystal Springs located in the canyon wall to the north and across the river from the hatchery site. This water is piped via a 36" pipeline on the river bottom to the hatchery site on the south bank of the river. The hatchery is now operating on an estimated 40-50 cfs. Future water quantities will be developed to an estimated 90-113 cfs. There is considerably more water available at present that can be used if necessary. We are spilling at the spring site at present. Water temperature is a near constant 59 F. The water is of excellent quality. Oxygen is near 10 parts per million at the headrace.

The physical features at the hatchery are:

2 Permanent employees (one temporary laborer was hired for February, March and April for three days per week).
1 Building combined with office, crew room, feed storage and shop.
2 12^1 x 60^1 trailer homes.
12 Raceways 190^1 x 5^1 x 24".
4 Raceways 320^1 x 6^1 x 30".
2 Raceways 210^1 x 10^1 x 36".
1 Master valve complex.
Numerous abandoned earthen raceways. (These comprised the bulk of the hatcheries original carrying capacity.)

FISH PRODUCTION

No fish eggs were received this year because the hatchery is to be shut down for construction.

Production was limited to the crop presently in the raceways. These included:

	Number of fish	Pounds of fish	Average size
B steelhead	60,404	15,640	3.8/lb
A steeihead	204,170	79,790	2.6/lb.
Total	264,574	95,430	

FISH HEALTH

Fish health was exceptionally good during the year. No disease was encountered even though a routine inspection indicated that IPN virus was present in the A steelhead..No treating was done except a prophylaxis type treatment following the fin clipping operation. We attribute the healthy conditions to good fish culture practices and a plentiful supply of good quality water. We kept the raceways brushed clean throughout the rearing time at the hatchery. These fish were kept thinned out as soon as crowded conditions started to occur. Also, whenever oxygen began to drop, as determined by frequent testing, we had water enough to turn more fresh water into the raceways. Hard work and close vigilance paid off in healthy fish.

FISH RELEASES

Fish planting was done during April of 1984.The A-strain fish, because of their larger size, were first to be planted. They were planted in the main Salmon River at the Sawtooth site near Stanley. A total of 204,170 fish were released. All arrived at the release site in good condition. Planting started April 2 and ended April 18.

The B strain fish were planted in Allison Creek, Slate Creek, and East Fork of the Salmon River, all are tributaries of the Salmon River. Planting started with this group April 19 and ended April 25 at the East Fork of the Salmon River. These fish also arrived at the respective planting sites in good condition.

Fish planting was done this year by private carrier pulling a Corps of Engineers tanker trailer.

FISH FEED UTILIZED

Rangens fish feed was fed during this fish year. The fish food quality from Rangens was good. It was a good pellet with few fines. The fish liked it and fed vigorously upon it.

A total of 154,120 pounds of feed was fed for a cost of $29,516.04. From the feed fed, a total of 94,790 pounds of fish was produced. A feed conversion factor of 1.6 was achieved.

HATCHERY IMPROVEMENTS

Again this year no major improvements were started at the station. A complete shutdown for new hatchery construction is contemplated. Thus far, a new domestic water well has been drilled, tested for water volume and capped. More surveying has been done and the water collection system across the river is to be let out for bid soon. Contracts for hatchery construction are to be let in the spring of 1985 after completion of the initial phase of the water collection system.

SPECIAL STUDIES

A trout feed experiment was started at Magic Valley Steelhead Hatchery on June 21, 1983. This continued through the fish year until the fish were planted in April of 1984. B strain steelhead were used for the experiment. The purpose was to determine growth rates, feed conversion rates and feed cost differences, if any existed, between the two diets. Rangens trout feed was used versus Clear Springs trout diet.

An equal number of fish and total pounds were selected for the test. A total of 31,098 fish or 73 pounds were used for each lot. These numbers and pounds were put in raceways side by side where an equal amount of water could be used for each lot.

Each lot of fish became infected with bacterial gill disease during the summer of 1983. Each was treated two days with a flush of Benzylkonium Chloride, followed by feeding fourteen days with Terramycin-fortified feed. These outbreaks did not occur at the same time. The Rangens diet fish became ill first, followed in approximately two weeks by the Clear Springs diet fish. None of the test fish became ill until the four raceways of A-strain fish not being tested became ill and recovered from the disease. The A-strain fish not on the test were on the same diet as the test fish on Rangens feed.

This one outbreak of disease was the only one encountered during the rearing period at Magic Valley. Also, as stated, this outbreak did not occur during the present fish year. Mention is made as the test carried over into this year. Some mortalities were suffered. Mortality reached a high of 100 at the peak for one day and rapidly dropped off to normal after treatment. I do not attribute any of the losses to be due to the different diets.

The final results of the test are as follows in Table 1:

Table 1. Results of diet test.

	Pounds fed	Gain	Conversion	Cost	Cost/lb gain
Clear Springs	16,752	6,967	2.44	3,611.64	0.52
Rangens	17,646	8,453	2.09	3,531.20	0.42

Conclusions: At the time we put the Rangens diet fish on 3/32 inch pellet this size was not available from Clear Springs. We had to keep the Clear Springs fish on #5 crumbles until they were' big enough to eat 1/8 inch pellets. As the fish got larger, they did not eat the crumbles well and did not do well for a month. The #5 crumble was dusty and the fish did not like it. This had an effect upon feed conversion with the Clear Springs diet. We could not get them to eat as much feed as the fish on Rangens feed. The advantages of Rangens feed included: lower prices, better conversion, better palatability, less fines, better availability of feed sizes, and lower cost per pound gained.

The decision was made that all steelhead released from Idaho would be given an adipose fin clip to aid in identifying steelhead returning to Idaho. This is to be an ongoing study. Magic Valley fish were adipose clipped from September 9 to October 14. The hatchery crew constructed a temporary shelter for clipping in inclement weather. Tables were set up to facilitate clipping. Weather remained good most of the period, and most of the clipping was done outdoors beside the raceways. Two modern trailers have since been constructed for indoor clipping under controlled conditions. Our method was quite primative but effective. The hatchery crew of two men and four temporary women clippers accomplished the task in a relatively short period of time. The hatchery crew kept the fish pushed up and available to the clippers. We also assisted in clipping when possible. A total of 264,574 fish were clipped in 10 working days. Very little loss was suffered from the clipping operation. The adipose clips looked good when the fish were stocked.

A study is underway on the descaling of steelhead; its possible causes, its severity, its effects and possible prevention. Fred Partridge and an assistant made periodic checks on the fish for descaling at the hatchery prior to loading, while loading and at the river dump sites. Magic Valley fish did not show an excessive amount of descaling, mostly a scattered pattern.

MISCELLANEOUS ACTIVITIES

Thirteen water table monitoring stations were read on a weekly basis and the report of findings was called in to the Walla Walla office of the Corps of Engineers. Two river water level gauges were also monitored, read weekly and readings were reported to the Corps. This information will aid in the final design of the hatchery.

A tentative equipment list for the new hatchery was prepared and sent in to the Nampa Office.

HATCHERY NEEDS

Since a new hatchery is contemplated for construction this year, hatchery needs are at a minimum.

ACKNOWLEDGEMENTS

Joe Nunnelly, Bio-Aide; Fred Partridge, Senior Fishery Research Biologist; Michael Graham, Fish Hatchery Superintendent II; and Robert Vaughn, Fish Hatchery Superintendent Ill.